ESDIS

EOS

MODIS Technical Meeting

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ESDIS

ESDIS /ECS Support to MODIS

- Establish a "pathfinder" program with MODIS, assigning ECS personnel to work with the MODIS development team to resolve issues with PGEs and metadata
- Streamlined the ESDT/Metadata validation by providing Metadata Configuration Files (MCFs) to the MODIS TLCF for pre-delivery testing by the instrument team, to verify compatibility with PGEs
- Conducting SSI&T "Checkout" in the Mini-DAAC on MODIS PGEs before they are delivered to the DAACs. To date:
  - Integrated initial versions of MODIS PGEs 01, 02, 03, 05, 07, 08, 11, and 12, 13, 14 with ECS (through PDPS)
  - Integrated MODIS PGE01 and executed with MODIS 5 minute data
  - Successfully executed MODIS PGEs 04, 15, and 21, 22, 23, 29 from the command line
  - Working on chaining PGEs 01, 02 and 03
  - Conducted early integrated tests with MODIS PGE 12 and key elements of the Land Tiling Production Rule in ECS Development facility. MODIS personnel participated in these tests.

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ESDIS /ECS Support to MODIS (contd)

- At MODIS's request, ECS evaluated the feasibility of upgrading the SGI Fortran compiler baseline to Version 7.2. (Response was much slower than MODIS would have liked, but the complexity and criticality of the evaluation - since it also effected the C compiler due to shared libraries - was much greater than MODIS assumed). The upgrade has been approved and the baseline updated. Expect installation to begin at DAACs starting 5/15.
- MODIS has been the focus of most of the Performance and Stability Team work. Accomplishments include:
  - Day-in-a-day static model created for MODIS PGEs at Goddard (that have been identif ied as candidates for launch certification). Assumed no ramp-up (i.e., assumed 100% of products produced at all levels). Analysis showed sufficient processing and scheduling capacity available.
  - In Stability lab, demonstrated the capability to ingest and archive 8 hours of simulated MODIS Level 0 data in 1 hour, 40 minutes (or 4.8 times the keep up rates).

ESDIS /ECS Support to MODIS (contd)

- Performance Team demonstrated 9.6 MBytes/sec sustained archive to processing throughput rate during MODIS Level 1 production (using synthetic PGE for a single 2 hour Level 0 granule). All processing at Goddard DAAC requires sustained archive to processing throughput of 6.4 Mbytes/sec.
- Created a MODIS Level 1 2 week production plan for the Goddard DAAC

- **Provided extensive SSI&T training and support to the DAAC e.g.:**
  - Formal SSI&T training at Mini-DAAC and at GDAAC, EDC & NSIDC using MODIS PGEs
  - Provided on-site SSI&T support to GDAAC from ECS Science Office
  - Hosting GDAAC personnel in Mini-DAAC for initial SSI&T checkout of additional MODIS PGEs
- **Land Tiling alternatives implementation strategies under review**
  - ECS capability for Integration and Test in development facility in August 1998; available for installation in DAAC(s) in October 1998
  - Meetings to be scheduled to evaluate potential SCF-based and DAAC-based solutions

ECS Priorities

- Priority 1: L0 and ancillary data ingest and archive for AM-1 and Landsat-7; distribution of L0 and ancillary data to SCFs and Landsat project; ingest of products from SCFs; SSI&T support; DAR; expedited data support
- Priority 2: Production of Ll products; search and order of Ll products using Version 0 Web Gateway; basic QA support
- Priority 3: Search, order and distribution of Landsat-7 L0R fixed scene products to Landsat- users (using V0)
- Priority 4+: Additional functionality.

Functionality Now Deployed to GSFC, LaRC, EDC and NSIDC DAACs (Drop 4)

Priority 1:

- External interfaces for EDOS ingest; Landsat-7 LPS and IAS ingest; ASTER DAR, L 1A/L 1B ingest, and expedited data
- Archive and retrieval of MODIS, CERES, MISR and MOPITT Level 0, ASTER Level 1, and Landsat Level 0R and CPF
- Landsat-7 scene based subsetting; data and CPF distribution
- Data search and order via V0 Web interface
- Data visualization using EOSView
- Standing order and subscriptions
- Electronic data distribution, including to SCFs
- Planning and scheduling tools
- Scripted ad hoc reprocessing
- System management tools for multi-mode management, and problem tracking and resolution
- System management tools for infrastructure management
- Ingest of SCF-provided source code and test data
- Ingest of limited data volumes from SCFs
- AM-1 science software integration and test tools
- Concurrent ingest, archive and distribution

Priority 2:

- Operator-assisted science QA from SCF
- Production of AM-1 products using basic production rules (includes all ASTER production rules)
- Archive and retrieval of MODIS, CERES, MISR and MOPITT Level 1

Priority 3:

- Media (8 mm) distribution
- Large order management using thresholds
- User registration

Priority 4+:

- Archive and retrieval of MODIS, CERES, MISR, MOPITT and ASTER Level 2 products
- Limited production of L2+ products
- Advertisement of data products and services
- Automated, on-the-fly addition of new data types

Pre-launch Drop/Patch Contents

(Priority in parentheses)

- L1 Production Rules (PDPS) Patch
  - Production rule additions/fixes: Optional Inputs (2), Orbit Path (2), Multi-Granule ESDT (2), Metadata-based Query for Dyanmic Inputs (2)
  - Fixes to multi-file granule support (2)
- 4P/4Pl
  - External interfaces for ancillary data ingest from NOAA and GDAAC (1)
  - System management tools for start-up/shutdown, hardware and software fault monitoring, and baseline management (1)
  - Server failure recovery (1)
  - ESDT versioning (1)
  - Production request priorities (1)

    Optimized production scheduling (1)
  - ASTER L 1A/L 1B product-specific attribute support (1)
  - ASTER e-mail parser gateway (1)
  - Ingest and preprocessing of FDD attitude data (1)
  - Support for NOAA and AM-1 Emphemeris data types (1)
  - L-7 MOC cloud cover scripts (1)
  - Enhanced Ad Hoc Reprocessing (2)
  - Optimized distribution cache management (2)

    Execution of processing chains across multiple science processors (2)

    FOS data inserts (2)

Pre-launch Drop/Patch Contents (cont.)
(Priority in parentheses)

- Landsat-7/NCR
  - L-7 subsetting, fixes: Fl and F2 time offset handling, and Band 8 (1)
  - L-7 polar coordinate support (1)
  - IAS CPF file name change (1)
  - Updates for L-7 Data Specification (I.e., DFCB) changes (1)
  - L-7 Billing and Accounting Workaround (3)
  - Outstanding Severity 1 and 2 NCR fixes

Level 1 PGEs Production Rules Status

Production Rule	Status
Basic Temporal	Tested
Advanced Temporal	Tested/New NCR 4/23
Period Specification	Tested
Optional Inputs	NCRs/Available 5/15
Alternate Inputs	Drop 4 - in Test
Metadata-Based Query - Static	Drop 4 - in Test
Metadata-Based Query- Dynamic	NCRs/Available 5/15
Multi-file Granule	NCRs/Available 5/15
Multi-Granule ESDT	Available 5/15
Orbit-Based Activation	NCRs Fixed in Drop 4/Drop 4 - in test
Orbit Path	NCRs/Available 5/15
Optional DPRs	Scheduled/Post 4P - workaround available

“Launch Ready” PGEs Production Rules Status

Production Rule	Status
Spatial Query	Drop 4 - in Test
Runtime Parameters	Drop 4 - in Test
Metadata-Based Activation	Drop 4 - in Test
Minimum No. of Granules	Drop 4P
Rectangular Tiling	NCRs Scheduled/Post 4P
Rectangular Tiling & Metadata Query	Scheduled/Post 4P
Ocean Data Day	Scheduled/Post 4P
Smart Start of Year	Scheduled/Post 4P

MODIS PGE Support At Launch

PGE	LEVEL	DESCRIPTION	PRODUCTION RULES UTILIZED	PRODUCTION RULES SUPPORTED AT LAUNCH	DAAC	Certification/ Launch
1	1A	1A/Geolocation	Basic and Adv. Temporal, Optional Inputs	GREEN	GSFC	Certification
2	1B	1B Calibration	Basic and Adv Temporal, Optional Inputs	GREEN	GSFC	Certification
3	2	Cloud Masks/Profiles	Basic Temporal, **Advanced Temporal,** Optional Inputs	GREEN	GSFC	Certification
4	2	Atmosphere	Basic Temporal, Optional Inputs, Metadata-Based Activation, **Metadata-Based Query**	GREEN	GSFC	Certification
5	3	Land Aerosol (Interim Daily Atmosphere)	Orbit-based Activation, **Minimum No. of Granules**	GREEN	GSFC	At-Launch
6	2	Clouds (Main Cloud Product)	Basic Temporal, **Advanced Temporal,** Optional Inputs	GREEN	GSFC	At-Launch
7	2	L2 Snow	Basic Temporal, **Metadata-Based Activation,** Metadata-Based Query	GREEN	GSFC	Certification
8	2	L2 Sea Ice	Basic Temporal, **Metadata-Based Activation,** Metadata-Based Query	GREEN	GSFC	Certification
9	2,3	Ocean Color	Basic Temporal, Advanced Temporal, and Metadata-Based Query	GREEN	GSFC	Certification
10	2,3	Sea Surface Temperature (SST)	Basic Temporal, Advanced Temporal	GREEN	GSFC	Certification
11	2	Reflectance/Fire (L2 Land Surface Reflectance)	Orbit-based Activation, Optional Inputs, Metadata-Based Query, Min. # Granules, and Runtime Parameters	GREEN	GSFC	Certification
12	2G	Pointers (L2G Combined Code) and MGGA	Period Specification, Lat/Long Tiling, **Metadata-Based Query**, Min. # Granules, Runtime Parameters		GSFC	Certification
13	2G	L2G Surface Reflectance/Fire (250m,500m,fire)	Period Specification, Lat/Long Tiling, **Metadata-Based Query**, Min. # Granules, Runtime Parameters		GSFC	Certification
14	2G	L2G Snow	Period Specification, Lat/Long Tiling, **Metadata-Based Query**, Min. # Granules, Runtime Parameters		GSFC	Certification
15	2G	L2G Sea Ice	Period Specification, Lat/Long Tiling, **Metadata-Based Query**, Min. # Granules, Runtime Parameters		GSFC	At-Launch
16	2,3	Land Surface Temperature (L2/L3)	**Advanced Temporal,** Period Specification, Min. No. of Granules, Metadata-Based Query	GREEN	GSFC	At-Launch
17	2*	Oceans Ancill. Meteorological Pre-proc.	Basic Temporal	GREEN	GSFC	Certification
18		DELETED FROM V2; SUBSUMED BY PGE51	See PGE51	N/A		

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MODIS PGE Support At Launch (cont.)

PGE	LEVEL	DESCRIPTION	PRODUCTION RULES UTILIZED	PRODUCTION RULES SUPPORTED AT LAUNCH	DAAC	Certification/ Launch
19	2*	Oceans Ancill. Ozone Pre-proc.	Basic Temporal	GREEN	GSFC	Certification
20	3	L3 Oceans Interim Daily	**Basic Temporal, Advanced Temporal**, Period Specification, Data Day, **Metadata-Based Query, Min. # of Granules**	GREEN/Data Day Workaround	GSFC	Certification
21	3	L3 Land Surface Reflectance - 8 Day	**Lat/Lon Tiling,** Metadata-Based Query, **Runtime Parameters,** Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year		EDC	Certification
22	3	L3 Aggregation	Period Specification, **Lat/Lon Tiling**, Metadata-based Query, **Min. # of Granules, Runtime Parameters**		EDC	At-Launch
23	3	BRDF/BARS (Albedo -16 day)	**Lat/Lon Tiling**, Metadata-Based Query, Min. No. of Granules, **Runtime Parameters,** Period Start_of_(16)_Days, Smart_Start_of_Year		EDC	At-Launch
24	3	BRDF-16 day	Min. No. of Granules, Period Start_of_(16)_Days, Smart_Start_of_Year	GREEN/Data Day Workaround/End Year	EDC	
25	3	Vegetation Indices -16 day (1 km)	**Lat/Lon Tiling,** Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, Period Start_of_(16)_Days, Smart_Start_of_Year		EDC	Certification
26	3	Vegetation Indices Monthly	**Lat/Lon Tiling,** Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, Period Start_of_(32)_Days, Smart_Start_of_Year		EDC	
27	3	CMG Vegetation Indices - 16 day	Min. No. of Granules, Period Start_of_(16)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
28	3	CMG Vegetation Indices Monthly	Min. No. of Granules, Period Start_of_(32)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
29	3	L3 Fire - 8 day	**Lat/Lon Tiling,** Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, Period Start_of_(8)_Days, Smart_Start_of_Year		EDC	Certification
30	3	L3 Fire Monthly	**Lat/Lon Tiling,** Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, Period Start_of_(32)_Days, Smart_Start_of_Year		EDC	

MODIS PGE Support At Launch (cont.)

PGE	LEVEL	DESCRIPTION	PRODUCTION RULES UTILIZED	PRODUCTION RULES SUPPORTED AT LAUNCH	DAAC	Certification/ Launch
31	3	Land Surface Temperature - 8 day	Metadata-Based Query, Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	At-Launch
32	3	CMG Land Surface Temperature Daily	Period Specification, Min. No. of Granules	GREEN	EDC	
33	4	LAI/FPAR Daily	Period Specification, **Lat/Lon Tiling**, Metadata-based Query, **Min. # of Granules, Runtime Parameters**		EDC	At-Launch
34	4	LAI/FPAR - 8 day	**Lat/Lon Tiling,** Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, Period Start_of_(8)_Days, Smart_Start_of_Year		EDC	At-Launch
35	4	CMG LAI/FPAR - 8 day	**Lat/Lon Tiling,** Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, Period Start_of_(8)_Days, Smart_Start_of_Year		EDC	
36	4	Net Primary Production - Daily	Period Specification, **Lat/Lon Tiling**, Metadata-based Query, **Min. # of Granules, Runtime Parameters**		EDC	
37	4	Net Primary Production - 8 day	**Lat/Lon Tiling,** Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, Period Start_of_(8)_Days, Smart_Start_of_Year		EDC	
38	4	NPP Yearly	**Advanced Temporal**, Period Specification, **Lat/Lon Tiling**, Metadata-Based Query, Min. No. of Granules, **Runtime Parameters**, "Smart" Start_of_Year		EDC	
39	4	CMG Net Primary Prod. - 8 day	Min. No. of Granules, Period Start_of_(8)_Days,Smart_Start_of_Year	GREEN/End Year	EDC	
40	3	Land Cover Monthly	Optional Inputs, **Lat/Lon Tiling, Metadata-Based Query,** Min. No. of Granules, **Runtime Parameters,** Period Start_of_(32)_Days, Smart_Start_of_Year		EDC	At-Launch
41	3	Land Cover Quarterly	Advanced Temporal, **Lat/Lon Tiling**, **Optional Inputs**, Metadata-Based Query, Min. No. of Granules, Runtime **Parameters**, Period Start_of_(96)_Days, Smart_Start_of_Year		EDC	
42	3	CMG Land Cover Quarterly	Min. No. of Granules, Period Start_of_(96)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
43	3	L3 Snow Daily	Period Specification, **Lat/Lon Tiling,** Metadata-based Query, **Min. # of Granules, Runtime Parameters**		NSIDC	Certification
44	3	Sea Ice Daily	Period Specification, **Lat/Lon Tiling,** Metadata-based Query, **Min. # of Granules, Runtime Parameters**		NSIDC	At-Launch

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MODIS PGE Support At Launch (cont.)

PGE	LEVEL	DESCRIPTION	PRODUCTION RULES UTILIZED	PRODUCTION RULES SUPPORTED AT LAUNCH	DAAC	Certification/ Launch
45	3	Snow-8 day	**Lat/Lon Tiling, Metadata-Based Query,** Min. No. of Granules, **Runtime Parameters**, Period Start_of_(8)_Days, Smart_Start_of_Year, Metadata-based Query		NSIDC	At-Launch
46	3	CMG Snow Daily	Period Specification, Min. No. of Granules	GREEN	NSIDC	
47	3	Sea Ice-8 day	**Lat/Lon Tiling, Metadata-Based Query,** Min. No. of Granules, **Runtime Parameters**, Period Start_of_(8)_Days, Smart_Start_of_Year, Metadata-based Query		NSIDC	
48	3	CMG Sea Ice Daily	Period Specification, Min. No. of Granules	GREEN	NSIDC	
49	3	Interim Ocean Weekly (time binner)	Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year, Data Day, **Runtime Parameters**	GREEN/Data Day Workaround/End Year	GSFC	Certification
50	3	Oceans Reference (soace binner)	Advanced Temporal, Period Start_of_(8)_Days, Smart_Start_of_Year, Data Day, **Runtime Parameters**	GREEN/Data Day Workaround/End Year	GSFC	Certification
51	3	Ocean Productivity Indices Running Year	Advanced Temporal, Optional Inputs, Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year, Data Day, **Runtime Parameters**	GREEN/Data Day Workaround/End Year	GSFC	At-Launch
52	3	Oceans Weekly Running Year Annual High Variance Linear Productivity	Period Start_of_(8)_Days, Smart_Start_of_Year, Data Day, **Runtime Parameters**	GREEN/Data Day Workaround/End Year		
53	3	Oceans Daily (cloud clearing)	Advanced Temporal, Period Specification, **Minimum No. of Granules**, Data Day, **Runtime Parameters**	GREEN/Data Day Workaround	GSFC	Certification
54	3	Ocean Weekly (time binner)	Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year, Data Day, **Runtime Parameters**	GREEN Data Day Workaround	GSFC	Certification
55	3	Clear Sky Daily	**Advanced Temporal**, Period Specification, **Minimum No. of Granules**	**GREEN**	GSFC	
56	3	L3 Atmosphere Daily	Period Specification, Min. No. of Granules	GREEN	GSFC	At-Launch
57	3	L3 Atmosphere Monthly	Min. No. of Granules, Period Start_of_(32)_Days	GREEN	GSFC	At-Launch

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MODIS PGE Support At Launch (cont.)

PGE	LEVEL	DESCRIPTION	PRODUCTION RULES UTILIZED	PRODUCTION RULES SUPPORTED AT LAUNCH	DAAC	Certification/ Launch
58	3	CMG Land Surface Temperature - 8 day	Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
59	3	CMG Land Surface Temperature Monthly	Min. No. of Granules, Period Start_of_(32)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
60	3	L3 CMG Fire Daily	Period Specification, Min. No. of Granules	GREEN	EDC	
61	3	L3 CMG Fire - 8 day	Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year	GREEN /End Year	EDC	
62	3	L3 CMG Fire Monthly	Min. No. of Granules, Period Start_of_(32)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
63	4	CMG LAI/FPAR Monthly	Min. No. of Granules, Period Start_of_(32)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
64	4	CMG Net Primary Production Yearly	Min. No. of Granules, Period Specification, **Smart_Start_of_Year**	GREEN/End Year	EDC	
65	3	CMG BRDF Monthly	Min. No. of Granules, Period Start_of_(32)_Days, Smart_Start_of_Year	GREEN/End Year	EDC	
66	3	Monthly 250m Land Cover	Advanced Temporal, Min. No. of Granules, Period Start_of_(32)_Days, Smart_Start_of_Year, Metadata-based Query, Optional Inputs	GREEN/End Year	EDC	At-Launch
67	3	CMG Snow - 8 day	Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year	GREEN/End Year	NSIDC	
68	3	CMG Sea Ice - 8 day	Min. No. of Granules, Period Start_of_(8)_Days, Smart_Start_of_Year	GREEN/End Year	NSIDC	
69	3	Atmosphere Daily Zonal Tiling	Period Specification, Zonal Tiling, Min. No. of Granules, **Metadata-Based Query, Runtime Parameters**		GSFC	At-Launch
70	3	CMG Snow Daily	Same as PGE46? DUPLICATE - Deleted	N/A	NSIDC	At-Launch

GSFC At-Launch Performance Requirements vs. Current Status

Thread	GSFC Data Per Day (GB)	GSFC Required Throughput Based On Hrs of Sustained Ops Per Day			Current Status (Single Thread)	Expected At Launch (Concurrent)	Comment
		24 Hrs	20 Hrs	16 Hrs			
Electronic Ingest to Archive (MB/sec)	74.00	0.86	1.03	1.23	4.10	3.50	MOD00 ingest test
Media Ingest to Archive (MB/sec)					5.80	3.50	Component test only - not end to end
Archive to Production - L1 Only (MB/sec)	70.00	0.81	0.97	1.22	9.00	2.00	MODIS L1 processing test (single PGE)
Production to Archive - L1 Only (MB/sec)	309.00	3.58	4.29	5.36		7.00	
Archive to Production - Higher Level Processing (MB/sec)	197.00	2.28	2.74	3.42		4.00	
Production to Archive - Higher Level Processing (MB/sec)	89.00	1.03	1.24	1.55		2.00	
Archive to Subsetting Server (SS) (MB/sec)						4.10	Avg L7 subinterval size = 4.8 GB; 1 scene per subinterval; 500 MB per scene; 100 scenes per day
SS to Media Distribution (MB/sec)						1.00	Limited by # of 8mm drives (4 @ .25 MB/sec = 1 MB/sec aggregrate)
SS to Electronic Distribution (MB/sec)						1.00	Limited by FDDI connection to external networks (6 MB/sec aggregate)
Archive to Media Distribution (MB/sec)	265.33	3.07	3.69	4.61		* 1.00	Limited by # of 8mm drives (4 @ .25 MB/sec = 1 MB/sec aggregrate)
Archive to Electronic Distribution (MB/sec)	265.33	3.07	3.69	4.61		* 5.00	Limited by FDDI connection to external networks (6 MB/sec aggregate)
# of Search Requests/hr		60.00	72.00	90.00		100.00	
# of Orders/hr		6.25	7.50	9.40		50.00	
AMASS RAID Partition (MB/sec)		14.70	17.63	22.04		30.00	
STMGT RAID Partition (MB/sec)		18.46	22.16	27.70		30.00	

EDC At-Launch Performance Requirements vs. Current Status

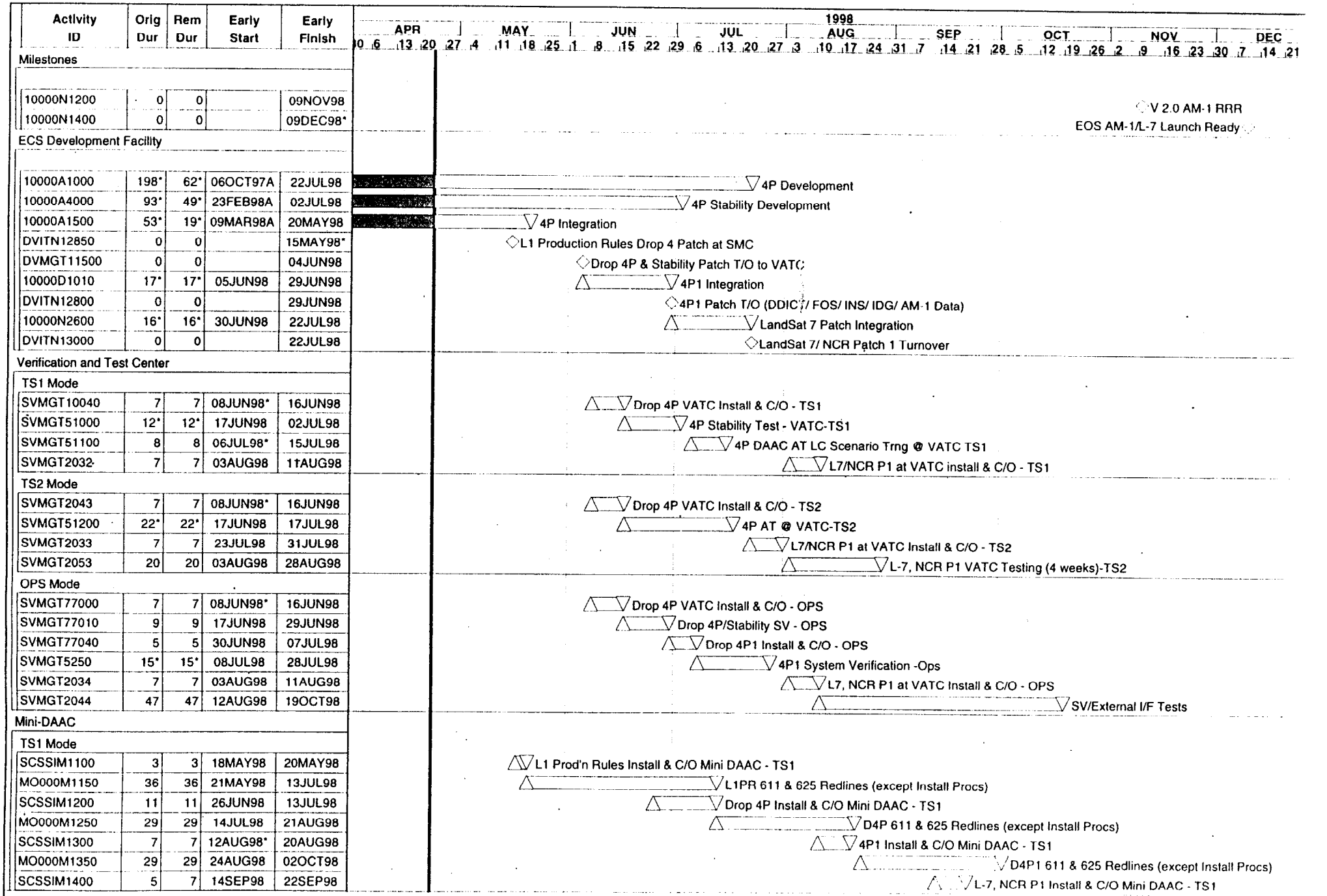
Thread	EDC Data Per Day (GB)	EDC Required Throughput Based On Hrs of Sustained Ops Per Day			Current Status (Single Thread)	Expected At Launch (Concurrent)	Comment
		24 Hrs	20 Hrs	16 Hrs			
Electronic Ingest to Archive (MB/sec)	140.00	1.62	1.94	2.43	4.10	3.50	MOD00 ingest test
Media Ingest to Archive (MB/sec)	136.00	1.57	1.89	2.36	5.80	3.50	Component test only - not end to end
Archive to Production - L1 Only (MB/sec)					9.00	2.00	MODIS L1 processing test (single PGE)
Production to Archive - L1 Only (MB/sec)						7.00	
Archive to Production - Higher Level Processing (MB/sec)	43.00	0.50	0.60	0.75		4.00	
Production to Archive - Higher Level Processing (MB/sec)	14.00	0.16	0.19	0.24		2.00	
Archive to Subsetting Server (SS) (MB/sec)		2.31	2.78	3.47		4.10	Avg L7 subinterval size = 4.8 GB; 1 scene per subinterval; 500 MB per scene; 100 scenes per day
SS to Media Distribution (MB/sec)	25.00	0.29	0.35	0.43		1.00	Limited by # of 8mm drives (4 @ .25 MB/sec = 1 MB/sec aggregrate)
SS to Electronic Distribution (MB/sec)	25.00	0.29	0.35	0.43		1.00	Limited by FDDI connection to external networks (6 MB/sec aggregate)
Archive to Media Distribution (MB/sec)	9.33	0.11	0.13	0.16		* 1.00	Limited by # of 8mm drives (4 @ .25 MB/sec = 1 MB/sec aggregrate)
Archive to Electronic Distribution (MB/sec)	9.33	0.11	0.13	0.16		* 5.00	Limited by FDDI connection to external networks (6 MB/sec aggregate)
# of Search Requests/hr		60.00	72.00	90.00		100.00	
# of Orders/hr		6.25	7.50	9.40		50.00	
AMASS RAID Partition (MB/sec)		6.39	7.66	9.58		30.00	
STMGT RAID Partition (MB/sec)		18.67	22.41	28.01		30.00	

LaRC At-Launch Performance Requirements vs. Current Status

Thread	LaRC Data Per Day (GB)	LaRC Required Throughput Based On Hrs of Sustained Ops Per Day			Current Status (Single Thread)	Expected At Launch (Concurrent)	Comment
		24 Hrs	20 Hrs	16 Hrs			
Electronic Ingest to Archive (MB/sec)	48.00	0.56	0.67	0.83	4.10	3.50	MOD00 ingest test
Media Ingest to Archive (MB/sec)	7.00	0.08	0.10	0.12	5.80	3.50	Component test only - not end to end
Archive to Production - L1 Only (MB/sec)	47.00	0.54	0.65	0.82	9.00	2.00	MODIS L1 processing test (single PGE)
Production to Archive - L1 Only (MB/sec)	185.00	2.14	2.57	3.21		7.00	
Archive to Production - Higher Level Processing (MB/sec)	48.00	0.56	0.67	0.83		4.00	
Production to Archive - Higher Level Processing (MB/sec)	19.00	0.22	0.26	0.33		2.00	
Archive to Subsetting Server (SS) (MB/sec)						4.10	Avg L7 subinterval size = 4.8 GB; 1 scene per subinterval; 500 MB per scene; 100 scenes per day
SS to Media Distribution (MB/sec)						1.00	Limited by # of 8mm drives (4 @ .25 MB/sec = 1 MB/sec aggregrate)
SS to Electronic Distribution (MB/sec)						1.00	Limited by FDDI connection to external networks (6 MB/sec aggregate)
Archive to Media Distribution (MB/sec)	123.33	1.43	1.71	2.14		1.00	Limited by # of 8mm drives (4 @ .25 MB/sec = 1 MB/sec aggregrate)
Archive to Electronic Distribution (MB/sec)	123.33	1.43	1.71	2.14		5.00	Limited by FDDI connection to external networks (6 MB/sec aggregate)
# of Search Requests/hr		60.00	72.00	90.00		100.00	
# of Orders/hr		6.25	7.50	9.40		50.00	
AMASS RAID Partition (MB/sec)		6.95	8.34	10.43		30.00	
STMGT RAID Partition (MB/sec)		7.91	9.49	11.86		30.00	

Performance Tests

Test	Test Elements	Results to Date	Status
MODIS Load Test 1	• Ingest one full 7.3 GB L0 granule • Execute all associated PGEs 01, 02 and 03 • Electronic and media distribution via subscription	• Able to create and archive all 22 Level 1 products (using small data granules). • Have obtained 9 MB/sec rate over HiPPI. • Achieved 4.1 Mbytes/sec. L0 ingest.	Need fixes for Severity 1 NCRs: 13556, 14146, 12676.
MODIS Load Test 2	• Ingest 24 hours of MODIS L0 • Execute all associated PGEs 01, 02 and 03 • Electronic and media distribution via subscription		Follows completion of MODIS Load Test 1.
ASTER Load Test	• Ingest full ASTER LlA/L1B tape • Produce all standard products • Electronic and media distribution via subscription	• Have ingested at 1.1 MB/sec from D3 at command line.	ASTER data fails in preprocessing. NCRs 09063, 10112, 10491, 13401.
Landsat-7 Load Test	• Ingest one full days worth of data (250 scenes) • Produce 100 subsetted scenes • Electronic and media distribution via subscriptions	• Need fixes to current Landsat-7 subsetting capabilities.	Waiting for Landsat-7 patch.
Concurrent Ingest Test	• Concurrent ingest of 10 large granules	• Obtained sustained ingest rates of nearly 4 MBytes/sec. with Drop 3.	Waiting for patch that removes unnecessary check-summing.



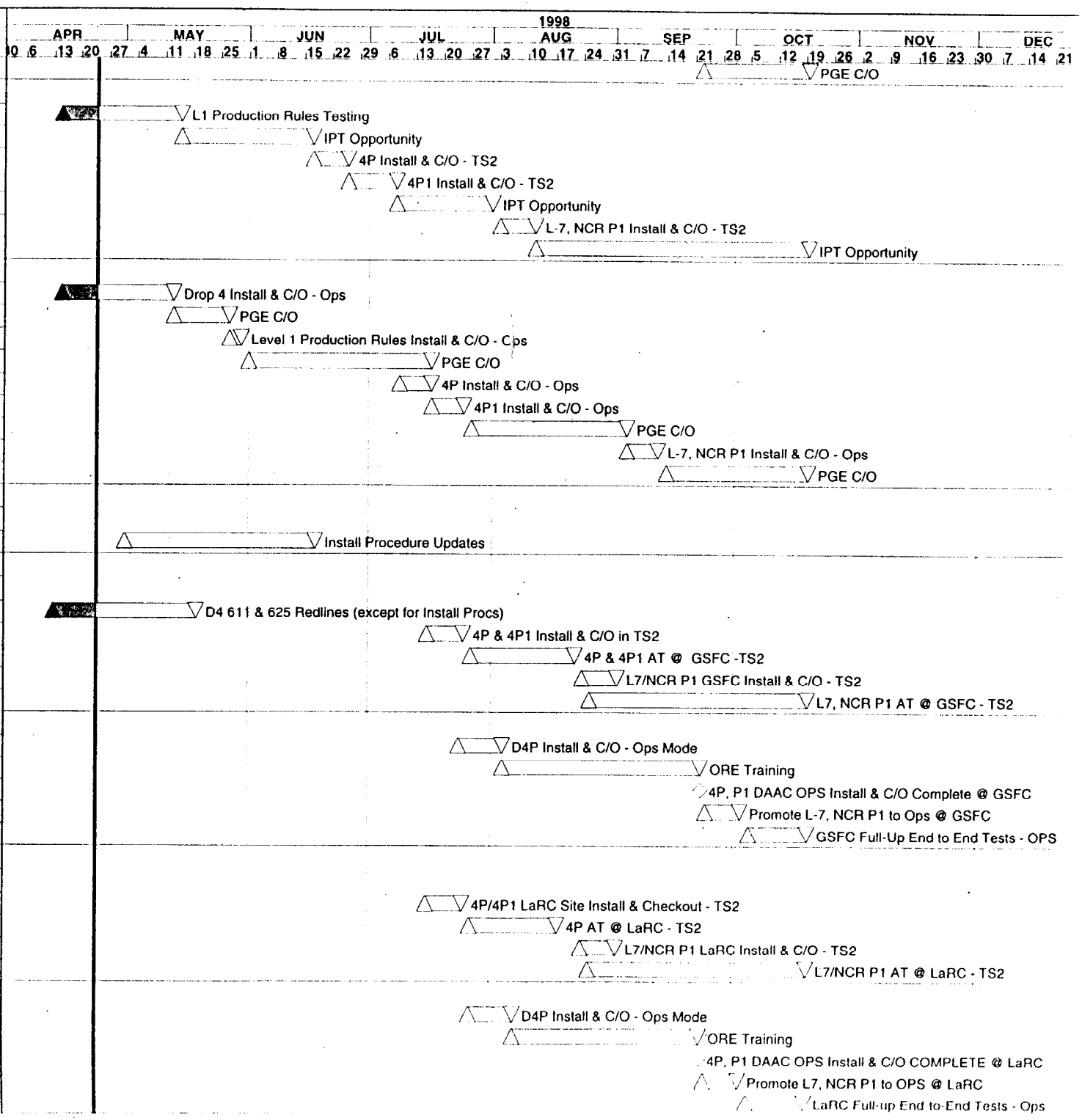
Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish
Milestones				
10000N1200	0	0		09NOV98
10000N1400	0	0		09DEC98*
ECS Development Facility				
10000A1000	198*	62*	06OCT97A	22JUL98
10000A4000	93*	49*	23FEB98A	02JUL98
10000A1500	53*	19*	09MAR98A	20MAY98
DVITN12850	0	0		15MAY98*
DVMGT11500	0	0		04JUN98
10000D1010	17*	17*	05JUN98	29JUN98
DVITN12800	0	0		29JUN98
10000N2600	16*	16*	30JUN98	22JUL98
DVITN13000	0	0		22JUL98
Verification and Test Center				
TS1 Mode				
SVMGT10040	7	7	08JUN98*	16JUN98
SVMGT51000	12*	12*	17JUN98	02JUL98
SVMGT51100	8	8	06JUL98*	15JUL98
SVMGT2032	7	7	03AUG98	11AUG98
TS2 Mode				
SVMGT2043	7	7	08JUN98*	16JUN98
SVMGT51200	22*	22*	17JUN98	17JUL98
SVMGT2033	7	7	23JUL98	31JUL98
SVMGT2053	20	20	03AUG98	28AUG98
OPS Mode				
SVMGT77000	7	7	08JUN98*	16JUN98
SVMGT77010	9	9	17JUN98	29JUN98
SVMGT77040	5	5	30JUN98	07JUL98
SVMGT5250	15*	15*	08JUL98	28JUL98
SVMGT2034	7	7	03AUG98	11AUG98
SVMGT2044	47	47	12AUG98	19OCT98
Mini-DAAC				
TS1 Mode				
SCSSIM1100	3	3	18MAY98	20MAY98
MO000M1150	36	36	21MAY98	13JUL98
SCSSIM1200	11	11	26JUN98	13JUL98
MO000M1250	29	29	14JUL98	21AUG98
SCSSIM1300	7	7	12AUG98*	20AUG98
MO000M1350	29	29	24AUG98	02OCT98
SCSSIM1400	5	7	14SEP98	22SEP98

Project Start	01SEP97
Project Finish	30DEC02
Data Date	24APR98
Run Date	28APR98

Early Bar
Progress Bar

AM-1/L-7 Launch Support
Mid-Level Schedule
April 28, 1998

Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish
SCSSIM1450	18*	18*	23SEP98	19OCT98
TS2 Mode				
SCOSEM2100	22	15	15APR98A	14MAY98
SCOSEM2125	22	22	15MAY98	16JUN98
SCOSEM2150	7	7	17JUN98	25JUN98
SCOSEM2200	7	7	26JUN98	07JUL98
SCOSEM2225	18	18	08JUL98	31JUL98
SCOSEM2250	7	7	03AUG98	11AUG98
SCOSEM2300	47*	47*	12AUG98	19OCT98
OPS Mode				
SCSSIM3100	13	13	15APR98A	12MAY98
SCSSIM3150	9	9	13MAY98	26MAY98
SCSSIM3200	3	3	27MAY98	29MAY98
SCSSIM3250	33	33	01JUN98	16JUL98
SCSSIM3300	6	6	09JUL98	16JUL98
SCSSIM3350	6	6	17JUL98	24JUL98
SCSSIM3400	29	29	27JUL98	03SEP98
SCSSIM3450	5	5	04SEP98	11SEP98
SCSSIM3500	25*	25*	14SEP98	19OCT98
Operations				
SC000O1100	33	33	01MAY98*	17JUN98
Goddard Space Flight Center				
TS2 Mode				
MO000G1100	26*	17*	13APR98A	18MAY98
SVMGT10080	7	7	16JUL98*	24JUL98
SVMGT72010	20	20	27JUL98	21AUG98
SVMGT72035	7	7	24AUG98*	01SEP98
SVMGT72040	37*	37*	26AUG98*	19OCT98
OPS Mode				
MODACG3100	7	7	24JUL98	03AUG98
MO000G3300	35	35	04AUG98	22SEP98*
SVMGT73035	0	0	23SEP98*	
SVMGT73075	7	7	24SEP98*	02OCT98
SVACT32226	10*	10*	05OCT98	19OCT98
Langley Research Center				
TS2 Mode				
SVMGT10090	7	7	16JUL98*	24JUL98
SVMGT5350	16*	16*	27JUL98	17AUG98
SVMGT73045	7	7	24AUG98*	01SEP98
SVMGT73040	37*	37*	26AUG98	19OCT98
OPS Mode				
MODACL1100	9	9	27JUL98	06AUG98
MO000L1200	32	32	07AUG98	22SEP98*
SVMGT73055	0	0	23SEP98*	
SVMGT73060	7	7	24SEP98*	02OCT98
SVACT98090	10*	10*	05OCT98	19OCT98



Activity ID	Orig Dur	Rem Dur	Early Start	Early Finish
EROS Data Center - Sioux Falls				
TS2 Mode				
SVMGT10100	7*	7*	27JUL98*	04AUG98
SVMGT74010	11*	11*	05AUG98*	19AUG98
SVMGT74015	7*	7*	24AUG98*	01SEP98
SVMGT74020	37*	37*	26AUG98*	19OCT98
OPS Mode				
MODACE1100	7	7	07AUG98	17AUG98
MO000E1200	25	25	18AUG98	22SEP98*
SVACT1751	0	0	23SEP98*	
SVACT1756	7*	7*	24SEP98*	02OCT98
SVAMG00165	10*	10*	05OCT98	19OCT98